



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>6</sup> :</b> <b>A61K 31/05, 31/135, 31/22, 31/565,</b> <b>31/57, 31/58, 31/66</b>	<b>A3</b>	<b>(11) International Publication Number:</b> <b>WO 98/03180</b>  <b>(43) International Publication Date:</b> 29 January 1998 (29.01.98)
<b>(21) International Application Number:</b> PCT/GB97/01973 <b>(22) International Filing Date:</b> 22 July 1997 (22.07.97)  <b>(30) Priority Data:</b> 9615348.1                      22 July 1996 (22.07.96)                      GB 9701600.0                      27 January 1997 (27.01.97)                      GB  <b>(71) Applicant (for all designated States except US):</b> THE VICTORIA UNIVERSITY OF MANCHESTER [GB/GB]; Oxford Road, Manchester M13 9PL (GB).  <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> FERGUSON, Mark, William, James [GB/GB]; 13 Peel Moat Road, Heaton Moor, Stockport, Cheshire SK4 4PL (GB). ASHCROFT, Gillian, Sarah [GB/GB]; 3 Canal Bank, Attley Bridge, Wigan WN6 9AN (GB).  <b>(74) Agent:</b> ATKINSON, Peter, Birch; Marks & Clerk, Sussex House, 83-85 Mosley Street, Manchester M2 3LG (GB).		<b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>  <b>(88) Date of publication of the international search report:</b> 4 June 1998 (04.06.98)
<b>(54) Title:</b> USE OF SEX STEROIDS FUNCTION MODULATORS TO TREAT WOUNDS AND FIBROTIC DISORDERS  <b>(57) Abstract</b>  <p>The present application relates to the use of compounds that influence the sex hormone system for the treatment of wounds and/or fibrotic disorders. Preferred compounds for use in such treatments are steroid hormones and especially the oestrogens.</p>		

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# INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 97/01973

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 A61K31/05 A61K31/135 A61K31/22 A61K31/565 A61K31/57  
A61K31/58 A61K31/66

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 94 02130 A (MASSACHUSETTS INSTITUTE OF TECHNOLOGY.) 3 February 1994  see page 3 - page 4; claims ---	1,14, 18-20, 28,29, 31-33
X	D.E. MORALES ET AL.: "Estrogen promotes angiogenic activity in human umbilical vein endothelial cells in vitro and in murine model." CIRCULATION, vol. 91, no. 3, 1995, pages 755-763, XP002047941 see the whole document ---  -/-	1-4,6-8, 32,33

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

11 March 1998

Date of mailing of the international search report

16.04.98

Name and mailing address of the ISA

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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 97/01973

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	J.B. SCHMIDT ET AL.: "New treatment of atrophic acne scars by iontophoresis with estriol and trenitoin." INT. J. DERMATOL., vol. 34, no. 1, 1995, pages 53-57, XP002047942 see the whole document ---	1-4,6, 14,28, 29,31-33
X	DATABASE EMBASE ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL accession No. 279680 Roczn. Akad. Marchewskiego, 1973 S. JAWORSKI: "The effect of estradiol upon healing of wounds of the urinary bladder in the guinea pig." XP002047943 see abstract ---	1-4,6-8, 32,33
X	F.W. PIRK ET AL.: "Effect of analogues of steroid and thyroxine hormones on wound healing in hamsters." J. PERIODONT. RES., vol. 9, no. 5, 1974, pages 290-297, XP002058524 * summary * ---	1,2,12
X	N.C. NANDI ET AL.: "Role of anabolic steroid in clean surgical wounds." J. INDIAN MED. ASSOC., vol. 84, no. 4, 1986, pages 116-118, XP002058525  see the whole document ---	1,2,12, 13
X	R. DOS SANTOS-PINTO ET AL.: "Pharmacological effect of nandrolone phenylpropionate on the healing of dental extraction wounds: a histological investigation in rats." J. NIPPON UNIV. SCH. DENT., vol. 12, no. 2, 1970, pages 57-61, XP002058526 see the whole document ---	1,2,12, 13
P,X	N.R. NAIR ET AL.: "Effect of anabolic steroid on experimental wound healing in calves." IND. J. VET. SURG., vol. 18, no. 1, 1997, pages 15-16, XP002058527 see the whole document -----	1,2,12, 13

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/GB 97/ 01973

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:  
  
see FURTHER INFORMATION sheet PCT/ISA/210
2. ☒ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:  
  
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1-8, 14, 18-21, 28-33  
9-11, 22-25  
12, 13  
15-17  
26, 27

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☒ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

International Application No. PCT/GB 97/01973

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

Claims Nos.: 1,5,32,33

because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

it is not clear which compounds are meant by 'a compound that influences the sex hormone system' or 'a modulator of the activity of...gonadotropin'

Remark : Although claims 22 are directed to a method of treatment of the human/animal body , the search has been carried out and based on the alleged effects of the compound/composition.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

Inter. Application No

PCT/GB 97/01973

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9402130 A	03-02-94	AU 4777293 A	14-02-94
		EP 0651637 A	10-05-95
		US 5569678 A	29-10-96
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